Effect of Solar Mass Ejections on Interplanetary Scintillations Observations

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Method of Interplanetary Scintillations (IPS) has been widely used to study interplanetary activity. IPS measurment provides an estimate of the density and velocity of the solar wind along the line of sight. This paper presents a model for plasma scattering by the multicomponent and time-varying interplanetary medium which we applied to the high-time resolution IPS data acquired during the 22nd Solar Maximum. We studied the effect of Solar Mass Ejections (SMEs) on IPS observations under various conditions. The model study suggests 1. Fast moving IPC are easier to detect closer to the sun, 2. Observations of IPCs at higher radio-frequencies are desirable and 3. Geometry of SME plays an important role in its early detection. These results would help planning of IPS observations to detect SMEs and monitor Space weather.